REMARKS

Initially, the withdrawal of the Examiner's objection to the disclosure and the rejection under 35 U.S.C. §§ 112 and 102 as discussed in paper no. 17 are acknowledged with appreciation.

Turning now to the art rejections of record, claims 1-3, 8-17, 22-28, 30-32, 37-42, 44-48, 52-59, 63-70, and 73-76 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Jessup et al., taken in view of Kaneko et al. For the following reasons, however, the Examiner's rejection is most respectfully traversed by Applicants. Applicants respectfully note that claim 73 was previously canceled in a Response dated January 18, 2002.

The presently claimed invention provides one with an unleaded gasoline fuel which is not in compliance with the California Predictive Model for reformulated gasoline, yet still offers good (low) emissions -- which result is not predicted by the California Predictive Model. The gasoline is also substantially free of oxygenates as recited in claim 1. For it has been surprisingly found that surprisingly low emissions, particularly NO_x, can be observed for the gasoline fuels of the present invention, with the NO_x emissions being substantially lower than that predicted by the California Predictive Model established by the California Air Resources Board (CARB). Good performance with surprisingly low NO_x emissions can be obtained despite the fact that the gasoline fuel of the present invention does not meet the specifications of the CARB reformulated gasoline fuel and hence fails the California Predictive Model. This is achieved particularly due to the control of sulfur to extremely low levels, a concept foreign to the prior art, as discussed on

pages 13 and 15 of the present application. The gasoline composition of claim 1 is substantially free of oxygenates, does not meet the flat limits for at least one, if not more, of the aromatic, T90 and/or T50 requirements set for the Phase 2 reformulated gasoline, and fails the California Predictive Model for emissions. Nevertheless, the gasoline fuel of the present invention allows one to enjoy good emissions, and particularly surprisingly low NO_x emissions, while also avoiding the potential problems of oxygenates. A big reason for this is that the gasoline also contains less than 10 ppmw sulfur.

The Jessup et al. reference cited by the Examiner in no manner discloses or suggests the ability of a substantially oxygenate free gasoline to exhibit low emission and still offer flexibility while not meeting the requirements of the California Predictive Model. In essence, the control of sulfur in the gasolines of the present invention to amounts less than 10 ppmw allow one to not meet the requirements of the California Predictive Model, yet still offer low emissions, particularly with regard to NO_x, in a substantially oxygen free gasoline. The Jessup et al reference in no manner discloses or suggests the control of sulfur in order to obtain such a gasoline. Moreover, as acknowledged by the Examiner, Jessup also does not disclose a gasoline with an aromatic content of between 25 and 30 volume perent.

The Examiner cites Kaneko et al. as a reference suggesting the importance of controlling sulfur. It is submitted by applicants, however, that the addition of Kaneko et al. in no manner cures the deficiencies of Jessup et al., or in it's own right suggests the claimed invention.

The Kaneko et al. reference relates to a lead free, high octane gasoline made up of a selective class of C_5 and C_6 hydrocarbons and an oxygenate, specifically methyl-T-butyl ether (MTBE). The presence of the oxygenate MTBE is required in an amount of at least three volume percent, and up to 15 volume percent, and more preferably at least four volume percent. The presence of the oxygenate is an important characteristic of the Kaneko disclosure. The presence of the oxygenate in the Kaneko et al. formulation is important to achieve its cold startability and reduction in emissions of NO_x. The present invention is substantially oxygenate free, and therefore clearly distinguishes Kaneko et al. One of ordinary skill in the art, therefore, contemplating a low emission gasoline which is substantially oxygenate free, would not even consider Kaneko et al. It is also required that when one considers a reference, all of the teachings of that reference must be considered. One cannot simply pick and choose. Upon considering all of the teachings of Kaneko et al., the skilled artsman would only be directed to an oxygenate containing gasoline, and not the gasoline of the presently claimed invention.

Indeed, Kaneko et al. supports the patentability of the subject claimed invention. In particular, it suggests that the presence of an oxygenate is an important consideration for reduction of emissions of NO_x. Nevertheless, the presently claimed invention permits one to achieve reductions in NO_x while being substantially oxygenate free, and not even meeting the requirements of the California Predictive Model. Accordingly, Kaneko et al. would teach away from the present invention, and underscore the non-obviousness of the claimed invention. Its consideration alone or in combination with Jessup et al, therefore, can in no manner suggest Applicants' claimed invention.

The Examiner however, contends that the Kaneko et al. reference provides motivation for one of ordinary skill in the art to reduce sulfur amounts to levels within the claimed range regardless of the presence or absence or oxygenates in the gasoline. This is because the reference discloses that above a certain amount, sulfur can damage the exhaust gas cleaner. However, it is submitted by Applicants that the Kaneko et al. reference does not suggest lowering sulfur to amounts of 10 ppmw or less, as required by the claimed invention.

More specifically, as disclosed in column 3, lines 16-20, it is stated that if the amount of sulfur is larger than 50 ppm by weight, this amount might be responsible for malfunction of an exhaust gas cleaner thus, the reference motivates one of skill in the art to simply maintain the sulfur amount to less than 50. It does state that it would be preferably less than 20, but nowhere is there any motivation to go less than 10 ppmw as in the claimed invention. Indeed, one looking at an economical gasoline would simply follow the teachings of Kaneko et al. and push the amount of sulfur as high as possible to avoid damaging the exhaust gas cleaner, which can be anywhere up to 50 ppm sulfur. Such motivation actually directs one away from Applicant's claimed invention, as discussed previously. Furthermore, there is certainly no motivation to reduce the sulfur amount to less than 10 ppmw and thereby receive the advantage of the present invention, as Kaneko et al. utilizes oxygenates to address its advantages in low emissions.

The Kaneko et al. reference simply does not pertain to a gasoline which is substantially free of oxygenates, and thus cannot provide the requisite motivation to lower the amount of sulfur to less than 10 ppmw such that a gasoline can be obtained which

exhibits good emissions, despite failing the California Predictive Model, and being substantially free of oxygenates. As discussed on page 20 of the present specification, one of the main advantages of the invention is that a less polluting, substantially oxygenate free gasoline fuel is provided that can be more easily prepared in a petroleum refinery or the like. That is, in a typical refinery in which gasoline is produced for sale, particularly in California, it is necessary or at least desirable in most instances to blend the hydrocarbon stock so as to produce gasolines of specific Reid vapor pressure, aromatic content, etc., and which meet all of the CARB Phase 2 gasoline requirements. The present invention allows a refinery to blend the stocks in a more practical manner in allowing reduced emissions, particularly the NO_x emissions. By following the present invention, additional flexibility is offered in blending the fuels, particularly with regard to the aromatic hydrocarbon content, the T50 and T90 specifications. Yet, an environmentally friendly fuel is provided which offers good performance and surprisingly low NO_x emissions, as well as flexibility of blending. This is all possible in a gasoline substantially free of oxygenates should the amount of sulfur be kept at less than 10 ppmw. Without the recognition of this advantage, the skilled artisan would not be motivated to push the sulfur level so low, because it could be costly to do so. If one were simply trying to avoid hurting an exhaust gas cleaner as in Kaneko et al., up to 50 PPM sulfur can still be used, which would not provide the advantages realized by the claimed invention.

Accordingly, it is submitted that Kaneko et al. does not provide the missing motivation in Jessup et al. to practice Applicants' claimed invention. Therefore, favorable

reconsideration and withdrawal of the Examiner's rejection of the claims of record over Jessup et al. taken in view of Kaneko et al. are respectfully requested.

Lastly, the Examiner has provisionally rejected the claims of record over several pending U.S. applications and issued patents under the judicially created doctrine of obviousness-type double patenting. The Applications are U.S. Serial No(s) 10/210,089; 10/210,090; 10/120,497; 10/120,498; 09/603,899; 09/977,395; 09/603,585; and U.S. Patent No(s) 6,132,479 and 6,383,236. It is submitted that a Terminal Disclaimer can overcome such obviousness-type double patenting rejections, and Applicants submit that once allowable subject matter is indicated to exist in the subject application, such Terminal Disclaimers will be provided in order to overcome the double patenting rejections. Further discussion on this issue is requested to be held in abeyance until such time.

From the foregoing, it is submitted that favorable consideration of the subject application is next in order, and is earnestly solicited.

Respectfully submitted,

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